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FUNCTIONAL OUTCOME OF FEMORAL NECK FRACTURE TREATED BY BIPOLAR HEMIARTHROPLASTY

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ABSTRACT

To evaluate outcome of neck fracture of the femur grade III and IV when treated by Bipolar hemiarthroplasty in elderly. Total 42 elderly cases were incorporated in study having neck fracture of femur with grade III and IV, and every one of the cases were chosen from the emergency department and OPD of LUH Hyderabad. All the pregnant women and cases not fit for anesthesia, or having any other severe disease like diabetes, hepatitis, arthritis or cardiovascular were not selected for this study. Totally selected cases were underwent a surgical technique (Bipolar Hemiarthroplasty). Data regarding cases of fracture, gender and post operative complications were noted functional outcome had evaluated according to Harris Hip Score. Mean age was 67.44±5.22 years. Females were in majority. According to Garden's classification grade IV was most common with 55% of the cases. Out of total cases 50% were slipped, and 19.1% cases fall from height, while 30.9% were injured due to road traffic accident. With respect to the complications severe pain in 10/(23.90%) cases. Deep infection was in 2/(4.76%) cases. Bed sore were in 4/(9.52%) cases during hospital stay, UTI developed in 3/(8.0%), while dislocation was the main complication and found in 1/(2.38%) cases. Mortality was 11.9%. 32.44% cases showed excellent results, 40.55% cases shows good and 13.50% cases shows satisfactory results, while 13.50% shows poor results. Bipolar hemiarthroplasty is very good treatment option for fracture of femur neck in old age cases.

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INTRODUCTION

Neck fracture of the femur is the exceptionally frequent event in old age patients,¹ and also remarkably difficult to orthopedic specialists. Its frequency always expanding as per the demographic judgment of future. Generally in old age cases it is describe a big health issue and have great effect on medical coverage costs. Hip fracture predominance linked with osteoporosis which dynamically increasing.² In Germany, an ascent of 74% in predominance of proximal fracture awaiting year 2020 is pridicted,³ and facilitate more an as of now hospital mortality 8.6% was represented in above the 85 year old cases. These fracture are associated to great ratio of mortality and morbidity.³ Consultants might ready to choose the hemiarthroplasty in the term of and unipolar, bipolar hemiarthroplasty or total hip arthroplasty, and CHS for internal fixation for the management of these fractures.⁴

As well as internal fixation and open reduction are associated to more post operative complications as; late union, non union, AVN and more ratio of morbidity and mortality due to long time of healing. World widely cases are treat by the CRIF utilizing cannulated screws or sliding hip screw like young peoples. For these events more choice able modern techniques are as; unipolar or bipolar hemiarthroplasty total hip arthroplasty.² Hence, ideal treatment for these fractures of the cases is still under discuss.⁵ At the point when bipolar hemiarthroplasty is applied for these fractures in old age cases,⁶ early recuperation is very essential to keep a reduction in exercises of day by day.⁶ Therefore purpose behind this study to assess the role of Bipolar Hemiarthroplasty in femoral neck fracture grade II and IV in old age cases.

MATERIAL AND METHODS

This study was experimental and was performed at department of orthopedic surgery at LUMHS Jamshoro. Total 42 elderly cases were incorporated in study having neck fracture of femur with grade III and IV, and every one of the cases were chosen from the emergency department and OPD of LUH Hyderabad. Duration of the study was time of 2010 to 2012. All the patients were informed regarding patient's conditions and surgical technique. All the pregnant women and cases not fit for anesthesia, or having any other severe disease like diabetes, hepatitis, arthritis, neurological problems or cardiovascular were not selected for this study. Complete physical examination was done, including history of fracture duration and causes. Required radiological diagnosis and routine laboratory investigations were referred to hospital laboratory. Totally selected cases were underwent a surgical procedure (Bipolar Hemiarthroplasty). Cases were allowed for sitting and slow and short exercise of foot and leg after 2nd postoperative day. Patients were remained 7 – 15 days in the ward after surgery. Cases were discharged after 15 days and were called after every two weeks in the OPD for thirty days and after one month were called every month for three months to 6 months. Data regarding causes of fracture, gender and post operative complications were noted functional outcome had evaluated according to Harris Hip Score and recorded on the performa.

RESULTS

TABLE NO. 1: Patient's distribution according to Age and gender n = 42.

Age and gender	
Mean+SD	67.44+5.22 years
Male/ Female = Ratio	2:1

Total 42 elderly cases were incorporated into the study. Mean age was 67.44+5.22 years. Females were in majority with male/female proportion 1:2. TABLE: 1.

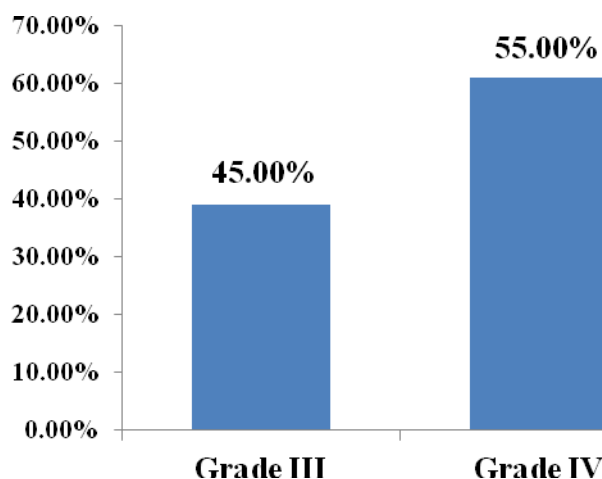


FIG: 1. FRACTURE GRADES ACCORDING TO GARDEN TYPE. N= 42.

According to Garden's classification grade IV was most common with 555 of the cases, while in grade III 45.% case were noted. FIG:1.

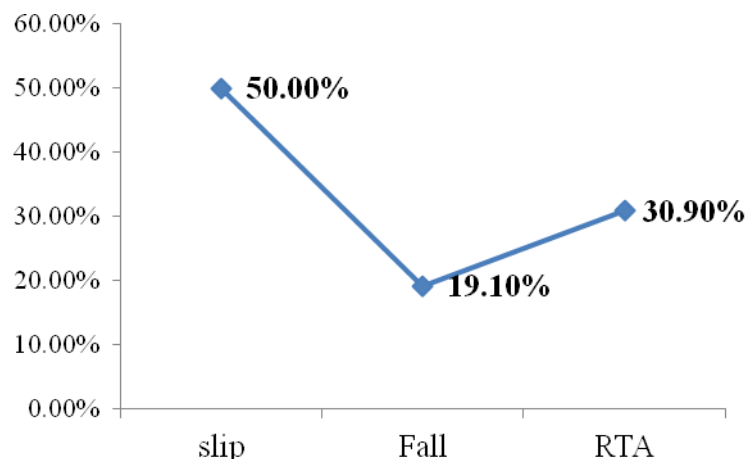


FIG: 2. Mode of injury n=42.

Out of total cases 50% were slipped, therefore this was the main reasons of female majority and 19.1% cases fall from height, while 30.9% were injured due to road traffic accident. FIG: 2.

TABLE:2. Post-operative complications n=42.

Complications	Frequency/ percentage
Pain	
Mild	21/(50.0%)
Moderate	11/(26.10%)
Severe	10/(23.90%)
Superficial infection	4/(9.52%)
Deep infection	2/(4.76%)
Chest infection	1/(2.38%)
UTI	3/(8.0%)
Bed sore	4/(9.52%)
Dislocation	1/(2.38%)

With respect to the complications, mild pain was in 21/(50.0%) cases, moderate in 11/(26.10%), and severe pain in 10/(23.90%) cases. Superficial infection was in 4/(9.52%) cases and deep was found in 2/(4.76%) cases. Bed sore were made in 4/(9.52%) cases, UTI developed in 3/(8.0%), while dislocation was the main complication and found in 1/(2.38%) cases. TABLE: 2.

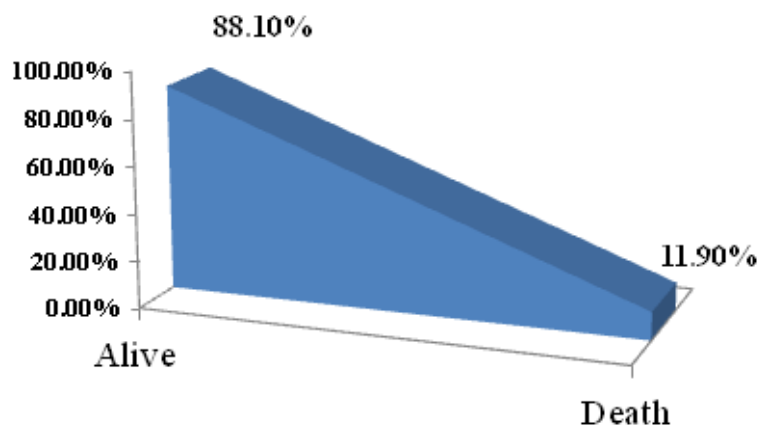


FIG: 2. Distribution of the cases according to Hospital mortality N= 42.

11.9% cases were died, while 88.1% cases were survived. FIG:2.

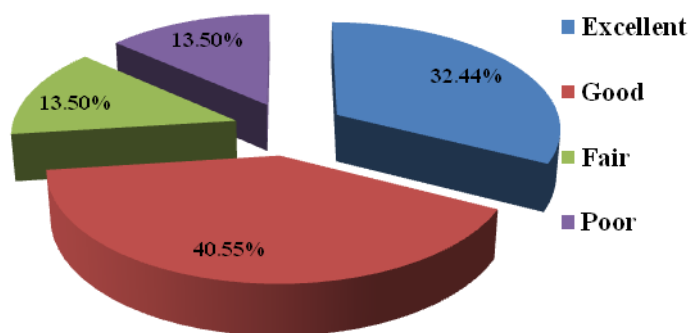


FIG: 3. Functional Outcome according to Harris Hip Score. n=37.

In 37 remaining cases functional outcome had evaluated by Harris Hip Score, 32.44% cases showed excellent results, 40.55% cases shows good and 13.50% cases shows satisfactory results, while 13.50% shows poor results. FIG: 3.

DISCUSSION

Bipolar hemiarthroplasty is a valuable treatment option for femoral neck fracture in old age cases. While dislocation is a big problem especially in more old age cases, and those having neurologic. In our study mean age was 67.44 ± 5.22 years. In other studies also reported comparable findings regarding of cases having femur neck fracture as; Hedbeck CJ⁷ reported 86.4 years with range of 80-100 yrs. Daniel M,³ reported mean age 67.7 yrs and range was 60 – 90 years. We found female in majority as male/female ratio of 2:1, this is because of in slipped cases women were most common. Ponraj RK et al,⁸ stated that 19 females and 11 males (ratio 1.7:1) mean age was 64 years.

Shrinivas Kalliguddi et al,⁹ mentioned 45% cases Slip and 40% cases were injured by RTA, and only 15% Fall from height. Slip and fall are the most common causes for these fractures. similarly in this series 50% were slipped, therefore this was the main reasons of female majority and 19.1% cases fall, while 30.9% were injured due to RTA.

In this study with respect to the complications, mild pain was in 21/(50.0%) cases, moderate in 11/(26.10%), and severe pain in 10/(23.90%) cases. Parker MJ et al.¹⁰ stated bipolar hemiarthroplasty cases had minimal pain and better mobility.

We found deep infection only in 2 cases. This is very low rate of infections according to other studies, because in our set up all surgeries carried out by senior surgeons with antibiotic cover. While 7.5% infection state by Dinesh Dhar.¹¹ UTI developed in 3cases this may because of long time uses of urinary catheter in those cases having delay union. While dislocation was the main complication and found only in one cases in 1/(2.38%) cases. This dislocation was caused by uncarefull shifting of the patients from theatre to the ward. In the contrast according to the different studies dislocation is the major complication of bipolar hemiarthroplasty is from 1.5% to 13.4%.¹²

Somashekar et al¹³ mentioned 9.5% mortality in cases those were treated by unipolar and bipolar hemiarthroplasty. In a study mentioned that 6 months mortality is 13.5%¹⁴ while one year mortality of regarding surgery of hip fracture was high roundabout 26%.¹⁴ As well as mortality rate of this study was found 11.9% which is slightly low, this may due to mean age of the cases of the of this study was 64.98 years and co morbidities was very low, and in other studies cases age had reported more than 70 years and big rate of morbidities was the big reason of mortality.

In this series functional outcome had evaluated by Harris Hip Score, and excellent results were in 32.44% cases, good and fair in 40.55% and 13.50% cases respectively, while poor results were in 13.50% cases. Similarly Wilson and R.D. Scott et al¹⁵ demonstrated successful use of bipolar implant for reconstruction of with acceptable relief of pain and functional ability. Ponraj RK et al,⁸ reported that after 6 months of follow-up using HHE, good results in 17 cases, excellent in 7 cases, fair in 4 cases and poor were found only in two cases. Rao S et al.¹⁶ mentioned that outcome of bipolar hemiarthroplasty according to HHS excellent 20%, good 60%, fair 15% and poor 5%. Cho MR et al¹⁷ reported that Harris hip score of the bipolar hemiarthroplasty was excellent 57.3% cases and good in 34%.

CONCLUSION

Main reason of these fractures slipping which reduced by well care of elders. Hemiarthroplasty (Bipolar) is very good surgical treatment option for femur neck fracture in old age cases. It has less morbidity and mortality and also commonly available.

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